NBS PUBLICATIONS



NBS Special Publication 686

State Weights and Measures Laboratories

Program Description and Directory





U.S. Department of Commerce National Bureau of Standards Gaithersburg, MD 20899

-QC 100 .U57 No. 686 1985 c. 2 JAN he National Bureau of Standards¹ was established by an act of Congress on March 3, 1901. The Bureau's overall goal is to strengthen and advance the nation's science and technology and facilitate their effective application for public benefit. To this end, the Bureau conducts research and provides: (1) a basis for the nation's physical measurement system, (2) scientific and technological services for industry and government, (3) a technical basis for equity in trade, and (4) technical services to promote public safety. The Bureau's technical work is performed by the National Measurement Laboratory, the National Engineering Laboratory, the Institute for Computer Sciences and Technology, and the Center for Materials Science.

The National Measurement Laboratory

Provides the national system of physical and chemical measurement; coordinates the system with measurement systems of other nations and furnishes essential services leading to accurate and uniform physical and chemical measurement throughout the Nation's scientific community, industry, and commerce; provides advisory and research services to other Government agencies; conducts physical and chemical research; develops, produces, and distributes Standard Reference Materials; and provides calibration services. The Laboratory consists of the following centers:

- Basic Standards²
- Radiation Research
- Chemical Physics
- Analytical Chemistry

The National Engineering Laboratory

Provides technology and technical services to the public and private sectors to address national needs and to solve national problems; conducts research in engineering and applied science in support of these efforts; builds and maintains competence in the necessary disciplines required to carry out this research and technical service; develops engineering data and measurement capabilities; provides engineering measurement traceability services; develops test methods and proposes engineering standards and code changes; develops and proposes new engineering practices; and develops and improves mechanisms to transfer results of its research to the ultimate user. The Laboratory consists of the following centers:

- Applied Mathematics
- Electronics and Electrical Engineering²
- Manufacturing Engineering
- Building Technology
- Fire Research
- Chemical Engineering²

The Institute for Computer Sciences and Technology

Conducts research and provides scientific and technical services to aid Federal agencies in the selection, acquisition, application, and use of computer technology to improve effectiveness and economy in Government operations in accordance with Public Law 89-306 (40 U.S.C. 759), relevant Executive Orders, and other directives; carries out this mission by managing the Federal Information Processing Standards Program, developing Federal ADP standards guidelines, and managing Federal participation in ADP voluntary standardization activities; provides scientific and technological advisory services and assistance to Federal agencies; and provides the technical foundation for computer-related policies of the Federal Government. The Institute consists of the following centers:

- Programming Science and Technology
- Computer Systems Engineering

The Center for Materials Science

Conducts research and provides measurements, data, standards, reference materials, quantitative understanding and other technical information fundamental to the processing, structure, properties and performance of materials; addresses the scientific basis for new advanced materials technologies; plans research around cross-country scientific themes such as nondestructive evaluation and phase diagram development; oversees Bureau-wide technical programs in nuclear reactor radiation research and nondestructive evaluation; and broadly disseminates generic technical information resulting from its programs. The Center consists of the following Divisions:

- Inorganic Materials
- Fracture and Deformation³
- Polymers
- Metallurgy
- Reactor Radiation

¹Headquarters and Laboratories at Gaithersburg, MD, unless otherwise noted; mailing address Gaithersburg, MD 20899.

²Some divisions within the center are located at Boulder, CO 80303.

³Located at Boulder, CO, with some elements at Gaithersburg, MD.

1985

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FOREWORD

As part of its mission to promote uniform standards of measurement throughout the country, the National Bureau of Standards (NBS) received funding in 1965 to issue new standards of mass, length, and volume to State weights and measures laboratories. This program included the equipment needed to perform calibrations in these measurement areas.

To maintain the validity of these standards and to assure that the standards are used properly, NBS trains State metrologists in the test procedures used in the NBS laboratories and conducts a voluntary certification program for State weights and measures laboratories. As part of the certification requirements, NBS requires that a State have adequate facilities in which to perform the measurements; the metrologist must receive the necessary training and submit data demonstrating the results of applying the test procedures; and the laboratory must establish measurement control programs acceptable to NBS in the various measurement areas. The certification program is described in Part I.

The directory in Part II lists State weights and measures laboratories and the services they provide to State and local weights and measures agencies as well as industry. It is intended to assist potential users in locating and obtaining needed services. This directory provides:

- a reference to laboratory services
- definition of services
- fees, if any, for services.

PART I

STATE LABORATORY CERTIFICATION

INTRODUCTION

The National Bureau of Standards (NBS) conducts a program whereby State weights and measures laboratories are certified by measurement areas. This certification does not mean that the measurements made by a State are certified, but only recognizes that an apparent capability to perform reliable measurements exists and that the metrologist has been trained in the proper procedures to provide these measurements. Additionally, the certification indicates that the metrologist has fulfilled the requirements and submitted the data requested by NBS for certification. Each State laboratory is responsible for the validity of its measurements.

The fact that a laboratory is not certified should not imply that the laboratory is inadequate or that its measurements are not valid. Rather, it indicates that a laboratory has not provided the necessary information to permit the NBS to evaluate its capability. Consequently, the NBS cannot take a position regarding the capability of this laboratory. Such laboratories must provide their own documentation to justify the validity of their measurements.

In 1965, Congress provided funds for NBS to issue new standards of mass, volume, and length to the States, the District of Columbia, Puerto Rico, and the Virgin Islands to update their weights and measures laboratories and increase their measurement capabilities. This was called the New State Standards Program. This program included the necessary laboratory equipment to use these standards and provide measurement services. Each jurisdiction was responsible for providing a laboratory and a metrologist to be trained to use the standards and the equipment. The standards were issued to the States from 1967 through 1978. Since that time, many States have purchased additional equipment to increase their measurement capability and to expand into other measurement areas, such as liquid-in-glass thermometry, the frequency testing of tuning forks for police radar guns, and the testing of large-volume provers.

MEASUREMENT AREAS FOR CERTIFICATION

A brief summary of each measurement area contained in the certification program is provided under the headings of Tolerance Testing and Calibration. Some States provide measurement services in other areas, but the NBS has not developed criteria to serve as the basis for laboratory certification in these areas. Consequently, they are not included in the certification program.

Each laboratory certified in a given area has been judged to be capable of providing the measurement services indicated. The range of standards that can be tested by a laboratory will depend upon the equipment it has purchased in addition to that received through the New State Standards Program. A general classification of the range of standards that can be tested is indicated by the headings of the tables of services available. The mass classifications for tolerance testing are given in pounds whereas the mass classifications for calibration are given in kilograms because inch-pound standards are usually used in tolerance testing and metric standards in calibrations. Comparable standards in other mass units of measure can also be tested.

TOLERANCE TESTING

A tolerance can be simply defined as the permitted difference between the nominal value of the standard and its actual value under specific conditions. Tolerance testing is the process in which a standard is tested to determine if the actual value of the standard is within tolerance. To be certified to a tolerance class, a standard must comply with the specifications and tolerances for the specified tolerance class.

Mass

Tolerance testing of mass standards is usually done according to specifications included in:

- NBS Handbook 105-1
- American Society for Testing and Materials Standard E617, Classes 4, 5, and 6
- NBS Circular 547, Classes P, Q, and T
- NBS Circular 3, Classes A, B, and C.

Tolerance testing to International Organization of Legal Metrology tolerances of classes F_2 , M_1 , and M_2 and other tolerances can be performed upon request.

Volume

Tolerance testing of volume standards is divided into small, intermediate, and large-volume standards depending upon the laboratory standards to be used. Small-volume standards may have a capacity up to 25 gallons. Glassware standards may be tested to NBS Handbook 105-2 tolerances or the tolerances stated in Federal regulations. Metal field standards are tested to NBS Handbook 105-3.

The capacities of intermediate-volume standards range from 25 through 500 gallons. Large-volume standards have capacities in excess of 500 gallons. These standards are usually tested to NBS Handbook 105-3.

CALIBRATION

Calibration is the process of comparing an unknown standard to a known standard and assigning a value, along with an uncertainty, to the unknown standard. The uncertainty expresses the extent to which that assigned value may be in error relative to its reference base, Which typically is the national standard. When calibrated by a State laboratory, the assigned value may or may not be within the specified tolerance; hence, the correction and uncertainty assigned to the standard should be used in subsequent measurements. In some cases, the assigned to standards will exceed the uncertainties tolerances. The uncertainties reflect the level of precision the State The uncertainty will differ from one laboratories can achieve. laboratory to another depending on standards and equipment available to perform the measurement. Potential customers should contact the State weights and measures laboratory to verify that the assigned uncertainty is adequate for their needs.

Mass

Calibrations are usually performed on mass standards designed to:

American Society for Testing and Materials Standard E617, Classes 1, 2, and 3

NBS Circular 547, Classes J, M, S, and S-1

International Organization of Legal Metrology Classes E2 and F1.

Depending on the laboratory, air buoyancy corrections may or may not be made. Customers should specify the apparent mass reference density desired for their calibration and the density of the mass standards.

Volume

Small glassware standards are usually calibrated gravimetrically or by volume transfer. The capacity of metal standards is typically 5 gallons or 20 liters.

Length

Steel tapes up to several hundred feet may be calibrated. The uncertainties are typically a few thousandths of a foot. Rigid rules up to 12 inches can be calibrated with uncertainties of several thousandths of an inch.

Frequency

The frequency calibration services are usually limited to tuning forks used with police radar guns.

Temperature

Temperature calibration is generally limited to liquid-in-glass thermometers. Some States test only clinical thermometers of this type. The standards for most States are also liquid-in-glass thermometers. The uncertainties for temperature calibration will vary among the laboratories. Many requests for calibrations involve tolerances specified by the customer.

REQUIREMENTS FOR LABORATORY CERTIFICATION

There are three general requirements for certification:

- 1. The State must have adequate laboratory facilities and equipment to provide the services that are offered.
- 2. The metrologist must receive regular training and demonstrate the ability to perform the laboratory measurements.
- 3. The metrologist must implement and maintain measurement contro' programs in various measurement areas as required by NBS.

The requirements for the laboratory facilities and general operation are contained in the NBS handbook entitled "State Weights and Measures Laboratories - Program Handbook." Each laboratory is evaluated through a self-appraisal checklist submitted by the metrologist, usually followed by an on-site evaluation. The metrologist is evaluated on the basis of performance in training seminars, the work submitted to NBS as part of the laboratory assignments, participation in technical meetings, and a review of laboratory data and test procedures during the on-site evaluation. The quality of a laboratory's measurement results are evaluated through its control charts and round robin experiments. Brief discussions of these topics follow.

TRAINING AND EVALUATION

The NBS trains State metrologists in the basic laboratory metrology procedures for mass, volume, and length measurement during a two-week seminar. The test procedures are described in NBS publications. The metrologists must then complete a series of laboratory assignments and submit the data to NBS to document their understanding of the procedures and the calculations. Additional laboratory problems are assigned to each laboratory to establish measurement control programs in several measurement areas.

Each metrologist is expected to attend the intermediate metrology seminar to receive additional training in laboratory procedures and in the corrections needed for high precision measurement. Following this seminar, the metrologists are assigned a series of problems to demonstrate their understanding of the seminar material.

States that expand into other areas of measurement are encouraged to attend specialized seminars conducted by the NBS calibration laboratories. Examples of these areas are temperature and pressure measurements. The laboratories <u>must</u> then establish measurement control programs in these measurement areas to assure agreement with NBS results.

Each State is expected to participate in Regional Measurement Management Programs (RMMPs). These RMMPs are groups of laboratories in given geographical areas that have joined together to conduct meetings for the purpose of training and demonstration of procedures, and to conduct round robin experiments to promote uniform measurements in their geographical area. The knowledge exhibited by metrologists in these meetings and their results on the round robin experiments are included as part of the evaluation of the State laboratories.

MEASUREMENT CONTROL

The NBS criteria require State weights and measures laboratories to utilize formal quality control techniques to ensure that their measurements are sufficiently accurate to meet their needs on a continuing basis. If such techniques are properly employed, it is possible to quantify the uncertainties of the measurements. Monitoring them over time can assure that they remain sufficiently small to meet operational requirements. The NBS has been working closely with the State weights and measures laboratories to help them improve and demonstrate their ability to perform high-quality calibrations.

Measurement control programs have been established for mass calibration and the volume transfer testing of glass volume standards. These programs will be expanded into the other measurement areas. Round robin experiments are conducted to investigate the agreement of the State laboratories in the other measurement areas.

The measurement control programs consist of two parts: internal control programs and external control programs.

INTERNAL CONTROL PROGRAMS

The internal measurement control programs generally consist of repeated measurements on the same objects over an extended period of time. The data are then plotted on control charts to establish the limits of random errors in the measurement processes. If these repeated measurements are made on the standards themselves, this approach monitors the standards as well as the variability of the measurement

process. Statistical confidence tests are used to monitor the stability of the standards and the variance of the measurement process. The control chart data can be used to document the validity of measurements made on a given day. Finally, the control chart data are used to determine if the standards agree with the NBS-reported values. Disagreement with the NBS-reported values requires corrective action. If the problem persists, the standards must be recalibrated by NBS.

In some measurement areas it is not possible to keep a standard or standards in the laboratory simply for the purpose of measurement control. In these instances, repeated measurements are run on each standard submitted for test. Differences in test results are then plotted on a "range" chart. The process variance is estimated from the range in the measurements made on many standards. The range chart is also used to verify that repeated measurements made on a given standard fall within the indicated limits.

In some instances, such as the volume transfer testing of glass flasks, a combination of control and range charts is used. The type of measurement control program depends on the criticality of the measurements, the availability of standards for use as "check" standards, and the tolerances for the standards under test. The frequency of measurements made to control the measurement process and the type of control program utilized are tailored to the measurement area under investigation.

EXTERNAL CONTROL PROGRAMS

In the external measurement control programs, standards external to the laboratory are submitted to the laboratory for test. These external standards are usually calibrated by the NBS to provide a reference value. These standards are usually circulated as part of round robin experiments conducted and coordinated by the Regional Measurement Management Programs (RMMPs). Although the NBS provides values for the circulating standards, the round robin experiments are developed, coordinated, and analyzed by the RMMPs. The NBS participates in the data analysis and the regional meetings to identify any problems and to provide training to eliminate discrepancies. This information is vital to the NBS certification program. The RMMPs are thus an integral part of the NBS certification program and reduce the amount of effort necessary to monitor the State laboratories.

The external measurement control programs are used to compare the RMMP results to the NBS values. These programs investigate the presence of systematic errors and can be used to test the variance of the measurement processes. Plots of interlaboratory results are frequently used to analyze data. Internal measurement control programs should be established before a laboratory participates in round robin experiments to obtain maximum benefits from these external measurement control programs.

The RMMPs are groups of State and, to a limited extent, private laboratories that have joined together to conduct meetings and perform round robin tests in mass, length, and volume to promote uniformity in test procedures and measurement results. Five RMMPs provide the opportunity for all the States, the District of Columbia, Puerto Rico, and the Virgin Islands to participate (Figure 1):

- Northeastern Measurement Assurance Program (NEMAP)
- Southeastern Measurement Assurance Program (SEMAP)
- Western Regional Management Group (WRMG)
- Mid-America Measurement Assurance Program (Mid-Map)
- Southwestern Assurance Program (SWAP)

The NBS goal is to provide an external measurement control system that is available to all States. The overall goal is for each State to participate in one of the five RMMPs. The RMMPs promote uniform measurement results by:

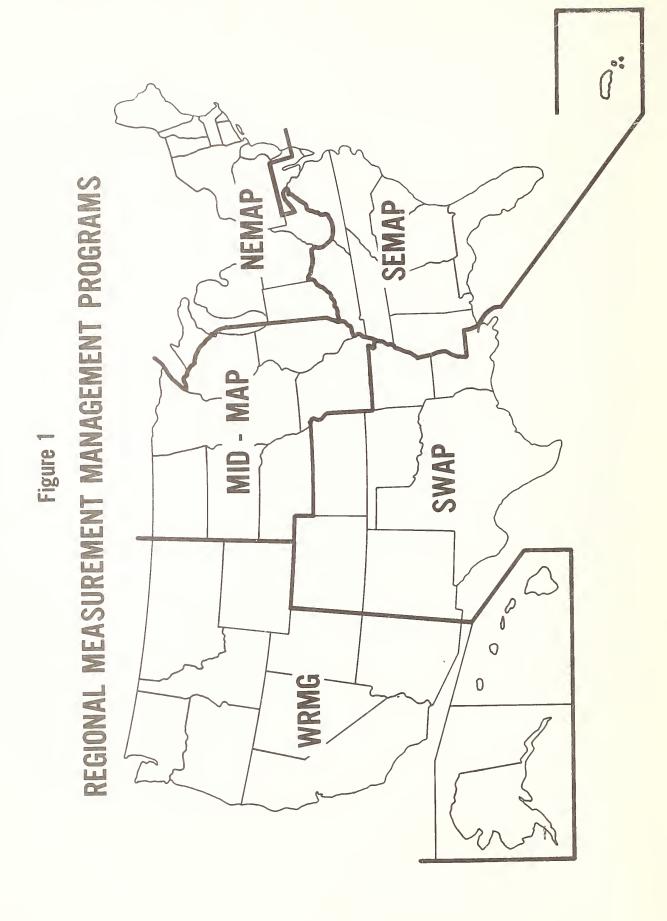
- 1. providing training through the presentation of papers prepared by members.
- 2. demonstrating test procedures to assure uniformity,
- 3. conducting round robin experiments to investigate the presence of measurement errors, and
- 4. addressing mutual problems.

Uniformity among RMMPs is attained through additional NBS training at the meetings, the calibration of standards used in the round robin experiments, and the evaluation of the round robin results. The RMMPs interact further through the Metrology Workshops held in conjunction with the National Conference on Weights and Measures. Members of each RMMP report on activities and round robin results and discuss ways of improving their condition.

CONCLUSION AND SUMMARY

Each State must have a trained metrologist and an adequate laboratory facility, and must demonstrate on a continuing basis that it is capable of providing valid measurements in order to be certified in a particular measurement area. The certification by NBS indicates that the laboratory is capable of providing a measurement service, but each State must justify the validity of its own measurements.

The table that follows summarizes the certified areas of measurement for each State. Part II provides detailed information to assist industry and government agencies in locating laboratories that provide needed measurement services.



Certified Areas of Measurement for 1985

!		TOLE	TOLERANCE TESTING	STING					CALIBRATION	MATION			
1	Praiss	3.5		Volume		Ma	Mass	Volume	ume	Length	th	Freg.	Temp.
10	Weight 1000 1b	Weight 1000 lb	Small 25 g al	Inter. 25-500 gal	Large > 500 gal	Weight s 3 kg	Weight > 3 kg	Small Glassware	Metal Stds	Steel Tapes	Rigid Rulers	Tuning Forks	Liguid in Glass Thermo.
Alabama	>	>	>	>	>	>	>		>	>	>		
Alaska	>	^	>	>	>	^	_		^	1	1	V	
Arizona	>	1	>	>	`^	>	À	٨	^	^	^	^	
Arkansas	>	^	>	>	`^	>	^	^	^	^	^		
California	>	^	>	>	^	>	`~	<u></u>	^	^	^		^
Colorado	^	^	^	>	1	>	^		^	>	^	^	
Connecticut	^		^			>	^	<u> </u>	>	>	`^		`
Delaware	>	>	^	>	`~	^	^		`~	>	A		
District of Columbia	ia /	^	>			^	1	^	`^	^			
Florida	>	7	>	^	>	^	_	_	^	^	1		
Georgia	>	^	>	^	`_	^	^	^	^	^	^		
Hawaii													
Idaho	>	^	>	^		^	À			^			
Illinois	>		>	^	>	^	^	À	1	1	^		
Indiana	/	>	>	^		_	^	1	^	^	À		
Iowa	^	>	>	>		^		1	_	^	1		
Kansas	>	>	>			1	_	1		`^	1	>	
Kentucky	^		>	>	^						À		
Louisiana	,	>	^							1	_		1

Certified Areas of Measurement for 1985

		TOLE	TOLERANCE TESTING	STING					CALIBE	CALIBRATION			
	914	Mass		Volume		W	Mass	Volume	ите	Length	th	Freq.	Temp.
	Weight	Weight 1000 lb	Small 25 gal	Inter. 25-500 gal	Large 500 gal	Weight <	Weight > 3 kg	Small Glassware	Metal Stds	Steel Tapes	Rigid Rulers	Tuning Forks	Liquid in Glass Thermo.
Maine	`~		>	1	>	^	•			`^	>	^	
Maryland	^	^	^	^	^			``	>	1	^		^
Massachusetts		^	^	^		^	`~	``	>	^	`		
Michigan	^	^	>	^	^	^	^	`~	>	`~	`		
Minnesota	^	^	^	^	1					`^	^		
Mississippi	1		>			`	^			`_	`^		
Missouri	1			>	^							>	
Montana													
Nebraska	1	1	_	>	1	1	1	1	^	^	`^		
Nevada	1		1	>	1	1	1	1	^	>	`_		
New Hampshire	1		1			1	7			1	>		
New Jersey	1		1		1	>	1	1	^	`~	>	`^	
New Mexico	^	1	^	^	1	^	1	1	>	1	>	^	
New York	1	1	1	^	^	^	^	1	1	1	^		
North Carolina	^		1	1	1			>	^	1	>		>
North Dakota	^	1	>		1	^							
Ohio	1	1	7	^		`~	^		^	^	`		
Oklahoma		^	1			^	>	1	^	^	^		
Oregon	>	1	1	1	1	1	^			^	^		

Certified Areas of Measurement for 1985

	Тетр.	Liguid in Glass Inermo.																	
	Freq.	Tuning Forks										^							
	ıth	Rigid Rulers	/			`^			^	>		1							
CALIBRATION	Length	Steel	<i>\</i>			^			>	1		^		,	,	,			
CALIB	ume	Metal Stds				^			>			>			1	1			
	Volume	Small Glassware							^		^	1			^	>			
	Mass	Weight > 3 kg	`			1			1					>	>				
	M	Weight 3 kg	>			^		>	^			^		^	1	1			
		Large 500 gal				>			^	>		>		>	^	^			
STING	Volume	Inter. 25-500 gal	`^			^			1	`^	A	1		>	_	>	^		
TOLERANCE TESTING		Small 25 gal	>			>	^	^	^	^	^	>		>	_	^	_		
TOLE	Mass	Weight 1000 16	>						^	^		_		/	^	_			
	Ma	Weight 1000 1b	^			^	^	^	1	^	^	Å		1/	A	A			
			Pennsylvania	Puerto Rico	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Virgin Islands	Washington	West Virginia	Wisconsin	Wyoming		



PART II

DETAILED INFORMATION BY STATE

This section contains the following information by State (in alphabetical order):

- 1. Name(s) of laboratory staff
- 2. Mailing address
- 3. Telephone number(s)
- 4. Services available (see Part I for definitions of services)
- 5. Fee structure (if any).

Alabama

LABORATORY STAFF	ADDRESS	TELEPHONE NUMBER
John B. Rabb, Laboratory Supervisor John W. Campbell, Metrologist Terry Snow, Weights & Measures Inspector	Division of Weights and Measures Dept. of Agriculture and Industries P.O. Box 3336 Montgomery, AL 36109	205/261-2613-4 (Office) 205/261-2652 (Lab)

SERVICES AVAILABLE

	TEMP.	Liquid in Glass Thermo.	×
	FREQ.	Forks	×
	ETH	Rigid	F
CALIBRATION	LENGTH	Steel	ĹŢ.
CAI	AE.	Metal Stds	H
	NOTON	Small	Ħ
	MASS	Weight 3 kg	Ē-
	W/	Weight = 3 kg	Ħ
		Large > 500 gal	Ĺτι
ING	VOLUME	Inter. 25-500 gal	Ē
TOLERANCE TESTING		Smail 	ĮΞι
TOLERA	MASS	Weight 7000 lb	ĬΞι
	MA	Weight = 1000 lb	ഥ

0: Service to parent organization only; F: Service available on fee basis; N: Service available, no fee.

X: Services are either not available, certification was not requested, or certification was not granted.

LABORATORY STAFF	ADDRESS	TELEPHONE NUMBER
Darrel E. Cavender, Metrologist	Department of Commerce and Economic Development Division of Measurement Standards Box 111686 Anchorage, AK 99511	907/345-7750

		11	
	TEMP.	Liquid in Glass Thermo.	×
	FREO.	Tuning Forks	z
	LENGTH	Rigid Rulers	N
CALIBRATION	LEN	Steel Tapes	N
CAI	1E	Metal Stds	z
	VOLUME	Small Glassware	N
	MASS nt Weight	Weight > 3 kg	N
	MA	Weight	N
	Large	Large > 500 gal	N
LING	VOLUME	Inter. 25-500 gal	Z
TOLERANCE TESTING		Small = 25 gal	Z
TOLERA	MASS	Weight > 1000 lb	N
	MA	Weight	Z

0: Service to parent organization only; F: Service available on fee basis; N: Service available, no fee.

X: Services are either not available, certification was not requested, or certification was not granted.

FEES

Arizona

LABORATORY STAFF	ADDRESS	TELEPHONE NUMBER
Richard P. Horn, Metrologist Roger Macey, Inspector	Weights and Measures Division Department of Administration 3039 West Indian School Road Phoenix, AZ 85017	602/255-5211

SERVICES AVAILABLE

	AP.	d in SS mo.	
	TEMP.	Liquid in Glass Thermo.	×
	FREQ.	Tuning Forks	ഥ
	LENGTH	Rigid Rulers	ų
CALIBRATION	LEN	Steel Tapes	F
CAI	AE	Metal Stds	ţt
	VOLUME	Small Glassware	ĮΞ
	MASS	Weight 3 kg	Ħ
	MA	Weight	দ
		Large > 500 gal	Ħ
LING	VOLUME	Inter. 25-500 gal	Æ
TOLERANCE TESTING		Small = 25 gal	Ţ
TOLERA	MASS	Weight > 1000 lb	Ţ
	MA	Weight 5000 lb	Ē4

0: Service to parent organization only; F: Service available on fee basis; N: Service available, no fee.

X: Services are either not available, certification was not requested, or certification was not granted.

2444 4

Labor \$10 per hour

Arkansas

LABORATORY STAFF	ADDRESS	TELEPHONE NUMBER
Billy W. Sullivant, Lab. Supervisor Charles Kirspel, Jr. Metrologist Randall W. Burns, Metrologist	Weights and Measures Division Arkansas Bureau of Standards 4608 West 61st Street Little Rock, AR 72209	501/371-1759

SERVICES AVAILABLE

	TEMP.	Liquid in Glass Thermo.	×
	FREQ.	Tuning Forks	X
	LENGTH	Rigid Rulers	N
CALIBRATION	LEN	Steel	N
CAI	AE	Metal Stds	N
	VOLUME	Small Glassware	Z
	MASS	Weight 3 kg	N
	MA	Weight = 3 kg	N
		Large > 500 gal	Z
TING	VOLUME	Inter. 25-500 gal	Z
TOLERANCE TESTING		Small = 25 gal	N
TOLERA	MASS	Weight > 1000 lb	Z
	MA	Weight = 1000 lb	Z

0: Service to parent organization only; F: Service available on fee basis; N: Service available, no fee.

X: Services are either not available, certification was not requested, or certification was not granted.

California

LABORATORY STAFF	ADDRESS	TELEPHONE NUMBER
Joseph Rothleder, State Metrologist Thomas S. Fletcher, Weights & Measures Technician III Sandra Pifer, Weights & Measures Technician II Ronald Flores, Weights & Measures Technician I	Division of Measurement Standards Dept. of Food and Agriculture 8500 Fruitridge Road Sacramento, CA 95826	916/366-5119
-		

SERVICES AVAILABLE

	TEMP.	Liquid in Glass Thermo.	F
	FREO.	Tuning Forks	Х
	GTH	Rigid Rulers	F
CALIBRATION	LENGTH	Steel Tapes	F
CAL	AE	Metal Stds	F
	VOLUME	Small Glassware	F
	MASS	Weight > 3 kg	댅
	MA	Weight = s	F
		Large 500 gal	[±4
TING	VOLUME	Inter. 25-500 gal	ᄄ
TOLERANCE TESTING		Small = 25 gal	ഥ
TOLERA	MASS	Weight > 1000 lb	[z.,
	MA	Weight S 1000 lb	ഥ

0: Service to parent organization only; F: Service available on fee basis; N: Service available, no fee.

X: Services are either not available, certification was not requested, or certification was not granted.

Labor \$24 per hour

LABORATORY STAFF	ADDRESS	TELEPHONE NUMBER
Frank H. Brzoticky, Chief Metrologist	Weights and Measures Section Metrology Laboratory Department of Agriculture 3125 Wyandot Street Denver, CO 80211	303/866-2845

		in 0	
	TEMP.	Liquid ir Glass Thermo.	X
	FREQ.	Tuning Forks	দ
	LENGTH	Rigid Rulers	뇬
CALIBRATION	LEN	Stee! Tapes	FI
CAI	AE	Metal Stds	Ľτι
	VOLUME	Small Glassware	Ħ
	MASS	Weight 3 kg	ഥ
	MA	Weight = 3 kg	Ħ
		Large > 500 gal	ſΞų
LING	VOLUME	Inter. 25-500 gal	দ
TOLERANCE TESTING		Small = 25 gal	댼
TOLERA	MASS	Weight > 1000 lb	伍
	MA	Weight = 1000 lb	দ

0: Service to parent organization only; F: Service available on fee basis; N: Service available, no fee.

X: Services are either not available, certification was not requested, or certification was not granted.

Labor \$15 per hour

Delaware

TELEPHONE NUMBER	302/736-4824
ADDRESS	Div. of Standards and Inspection Department of Agriculture Drawer D Dover, DE 19901
LABORATORY STAFF	Robert E. Simmons, Metrologist

SERVICES AVAILABLE

	TEMP.	Liquid in Glass Thermo.	X
	FREG	Forks	X
	1	Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z	N
CALIBRATION		Steel	Z
S		Metal	Z
	VOLUME	Small	Z
	MASS	Weight W	N
	M	Weight 3 Kg	Z
		Large > 500 gal	Z
INC	VOLUME	Inter. 25-500 gal	Z
TOLERANCE TESTING		Small Small 25 gal	Z
TOLERA	MASS	Weight > 1000 lb	Z
	MA	Weight 5	Z

0: Service to parent organization only; F: Service available on fee basis; N: Service available, no fee.

X: Services are either not available, certification was not requested, or certification was not granted.

THE STATE OF THE S

District of Columbia

SERVICES AVAILABLE

TELEPHONE NUMBER

ADDRESS

LABORATORY STAFF

Earl E. Maxwell, Chief

202/767-7923

Office of Licenses and Permits Weights, Measures and Markets Div. Dept. of Licenses, Investigations

and Inspections 1110 U Street, SE Washington, DC 20020

	TEMP.	Liquid in Glass Thermo.	X
	FREO.	Tuning Forks	X
	LENGTH	Rigid Rulers	X
CALIBRATION	LEN	Stee! Tapes	F
CAI	AE	Metal Stds	년
	VOLUME	Small Glassware	F
	MASS	Weight 3 kg	Ħ
	MA	Weight	Ħ
		Large 500 gal	X
LING	VOLUME	Inter. 25-500 gal	X
TOLERANCE TESTING		Small = 25 gal	댼
TOLERA	MASS	Weight 2 1000 lb	দ
	MA	Weight = 1000 lb	দ

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X: Services are either not available, certification was not requested, or certification was not granted.

FEES

Labor \$15 per hour

Florida

TELEPHONE NUMBER	904/488-9295
ADDRESS	Bureau of Weights and Measures Department of Agriculture 3125 Conner Boulevard Tallahassee, FL 32301
LABORATORY STAFF	William Cogburn, Metrologist Supervisor Edward T. Koeppen, Metrologist

SERVICES AVAILABLE

	TOLERA	TOLERANCE TESTING	TING					CA	CALIBRATION			
MASS			VOLUME		M	MASS	VOLUME	M	LEN	LENGTH	FREQ.	TEMP.
13 0	Weight	Small = 25 gal	Inter. 25-500 gal	Large > 500 gal	Weight ≤ 3 kg	Weight > 3 kg	Small Glassware	Metal	Steel	Rigid Rulers	Tuning Forks	Liquid in Glass Thermo.
	N	N	N	N	N	N	N	N	N	N	X	X

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FFF

Georgia

LABORATORY STAFF	ADDRESS	TELEPHONE NUMBER
Martin T. Coile, Director Brenda J. Whitener, Lab. Scientist Reneé L Farley, Prin. Lab. Tech. Charles W. Glaze, Sr. Lab. Tech.	Weights and Measures Laboratory Atlanta Farmers Market Forest Park, GA 30050	404/363-7611-2

SERVICES AVAILABLE

	MP.	Liquid in Glass Thermo.	×
	TEMP.	Liqui Gla Ther	
	FREO.	Tuning Forks	X
	СТН	Rigid Rulers	Z
CALIBRATION	LENGTH	Steel Tapes	N
CAI	1E	Metal Stds	N
	VOLUME	Small Glassware	N
	MASS	Weight > 3 kg	Z
	MA	Weight	Z
		Large 500 gal	N
LING	VOLUME	Inter. 25-500 gal	N
TOLERANCE TESTING		Small = 25 gal	N
TOLERA	SS	Weight > 1000 lb	N
	MASS	Weight ≤	Z

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LABORATORY STAFF	ADDRESS	TELEPHONE NUMBER
James Maka, Metrologist	Measurement Standards Division Department of Agriculture P.O. Box 22159 Honolulu, HI 96822	808/548-7168

	TEMP.	Liquid in Glass Thermo.	X
	FREQ.	Tuning Forks	X
	LENGTH	Rigid Rulers	×
CALIBRATION	LEN	Steel Tapes	×
CAI	ME	Metal Stds	×
	VOLUME	Small Glassware	×
,	MASS	Weight 3 kg	×
	MA	Weight s	×
		Large > 500 gal	×
ING	VOLUME	Inter. 25-500 gal	×
TOLERANCE TESTING		Small = 25 gal	×
TOLERA	MASS	Weight > 1000 lb	X
	MA	Weight ≤ 1000 lb	×

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SHH

LABORATORY STAFF	ADDRESS	TELEPHONE NUMBER
A. Dale Hurd, Metrologist	Bureau of Weights & Measures Department of Agriculture 2216 Kellogg Lane Boise, ID 83702	208/334-2345

	TEMP.	Liquid in Glass Thermo.	×
	FREQ.	Tuning Forks	×
	GTH	Rigid Rulers	×
CALIBRATION	LENGTH	Steel Tapes	Z
CAI	W.	Metal Stds	×
	VOLUME	Small Glassware	×
	MASS	Weight > 3 kg	Z
	MA	Weight == 3 kg	N
		Large > 500 gai	×
TING	VOLUME	Inter. 25-500 gal	Z
TOLERANCE TESTING		Small = 25 gai	Z
TOLERA	MASS	Weight > 1000 lb	Z
	MA	Weight ====================================	Z

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X: Services are either not available, certification was not requested, or certification was not granted.

FEES S

TELEPHONE NUMBER	2-8480
TEL	217/785-8480
ADDRESS	Bureau of Laboratories Metrology Section Illinois Department of Agriculture 801 East Sangamon Avenue Springfield, IL 62706
LABORATORY STAFF	Stephen E. McGuire, Metrologist Richard Philmon, Metrologist Associate

	TEMP.	Liquid in Glass Thermo.	×
	FREQ.	Tuning Forks	×
	ENGTH	Rigid Ruters	Ĺτι
CALIBRATION	LEN	Steel Tapes	ţ
CAI	AE	Metal Stds	ഥ
	VOLUME	Small Glassware	Ĺτι
	MASS	Weight > 3 kg	ഥ
	MA	Weight ====================================	Ţ'n
		Large 500 gal	Ē4
JNI	VOLUME	Inter. 25-500 gal	দ
TOLERANCE TESTING		Small = 25 gal	댐
TOLERA	SS	Weight	ſτι
	MASS	Weight ≤ 1000 1b	Ŀı

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X: Services are either not available, certification was not requested, or certification was not granted.

LABORATORY STAFF	ADDRESS	TELEPHONE NUMBER
Peter W. Boykin, Metrologist	State Board of Health 1330 West Michigan St., Rm. A-120 Indianapolis, IN 46206	317/633-0789

	_		
	TEMP.	Liquid in Glass Thermo.	X
	FREQ.	Tuning Forks	X
	БТН	Rigid Rulers	Z
CALIBRATION	LENGTH	Stee! Tapes	N
CAI	F.	Metal Stds	N
	VOLUME	Small Glassware	N
	MASS	Weight 3 kg	N
	MA	Weight = 3 kg	N
		Large > 500 gal	X
LING	VOLUME	Inter. 25-500 gal	Z
TOLERANCE TESTING		Small = 25 gal	N
TOLERA	MASS	Weight > 1000 lb	N
	MA	Weight	N

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X: Services are either not available, certification was not requested, or certification was not granted.

S H S

lowa	
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TELEPHONE NUMBER	515/281-5861
ADDRESS	Weights and Measures Division Iowa Department of Agriculture Henry Wallace Building Des Moines, IO 50319
LABORATORY STAFF	Robert E. Hollis, Metrologist Robert K. Brown, Laboratory Assistant III

		n	
	TEMP.	Liquid in Glass Thermo.	X
	FREO.	Tuning Forks	×
	БТН	Rigid Rulers	拓
CALIBRATION	LENGT	Steel Tapes	귚
CAI	IE	Metal Stds	Ţτ
	VOLUME	Small Glassware	ഥ
	MASS	Weight > 3 kg	귚
	MA	Weight ≤ 3 kg	ഥ
		Large > 500 gal	ഥ
LING	VOLUME	Inter. 25-500 gal	댐
TOLERANCE TESTING		Small = 25 gal	Ţ
TOLERA	MASS	Weight > 1000 lb	갶
	MA	Weight	다

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The fee for all prover calibrations shall be as follows:	100 gallons up to and including 300 gallons301 gallons up to and including 500 gallons	501 gallons up to and including 1000 jallons	2001 gallons up to and including 3000 (allons	4001 gallons up to and including 5000 sallons	6001 gallons up to and including 7000 gallons
49	Over fit pounds capacity, up to and including one hundred pounds			C'LEAN AND PAINT WEIGHTS 6.00 each	

\$ 3.00 5.00 7.50 10.00 12.00 14.00 16.00 18.00 20.00 25.00

LABORATORY STAFF	ADDRESS	TELEPHONE NUMBER
James H. Akey, Metrologist DeVern H. Phillips, Assistant Metrologist	Kansas Department of Agriculture Weights and Measures Division 2016 West 37th Street P.O. Box 5516 Topeka, KS 66605	913/267-4641 (Office) 913/267-0278 (Lab)

		1	
CALIBRATION	TEMP.	Liquid in Glass Thermo.	X
	FREO.	Tuning Forks	ĹŦij
	LENGTH	Rigid Rulers	দ
		Steel Tapes	ᄕ
	VOLUME	Metal	×
		Small Glassware	ഥ
	MASS	Weight > 3 kg	দ
		Weight ====================================	ഥ
TOLERANCE TESTING	VOLUME	Large > 500 gal	×
		Inter. 25-500 gal	X
		Small = 25 gal	ഥ
	MASS	Weight Small	댄
		Weight ====================================	ſŦ,

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FEES

Kentucky

LABORATORY STAFF	ADDRESS	TELEPHONE NUMBER
Mark L. Whitaker, Metrologist	Division of Weights and Measures Department of Agriculture 106 West Second Street Frankfort, KY 40601	502/564-4870

SERVICES AVAILABLE

CALIBRATION	TEMP.	Liquid in Glass Thermo.	×
	FREO.	Tuning Forks	×
	LENGTH	Rigid Rulers	N
		Steel Tapes	Z
	VOLUME	Metal Stds	×
		Small Glassware	×
	MASS	Weight 3 kg	×
		Weight = S	×
TOLERANCE TESTING	VOLUME	Large 500 gal	Z
		Inter. 25-500 gal	N
		Small = 25 gal	Z
	MASS	Weight > 1000 lb	×
		Weight ≤ 1000 lb	Z

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X: Services are either not available, certification was not requested, or certification was not granted.

FEES

Louisiana

LABORATORY STAFF	ADDRESS	TELEPHONE NUMBER
Randall K. Bellon, Metrologist	Division of Weights and Measures Department of Agriculture P.O. Box 44456, Capitol Station Baton Rouge, LA 70804	504/925-3780 (Office) 504/342-6683 (Lab)

SERVICES AVAILABLE

	TEMP.	Liquid in Glass Thermo.	X
	FREQ.	Tuning Forks	×
	LENGTH	Rigid Rulers	ഥ
CALIBRATION	LEN	Steel Tapes	[エィ
CA	Æ	Metal Stds	X
	MASS VOLUME	Small Glassware	×
		Weight > 3 kg	×
		Weight ====================================	×
		Large > 500 gal	X
LING	MASS VOLUME	Inter. 25-500 gal	X
TOLERANCE TESTING		Small = 25 gal	ĹΤί
TOLERA		Weight > 1000 lb	단
		Weight ≤ 1000 lb	다

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	50.00	4.00	7.50	10.00	20.00	25.00	50.00	00.09	75.00	85.00
ights	1b	16	1b	1b	1.6	1b	1b	1b	1b	16
f We	32	N	100	500	000	000	500	000	250	000
9		\ \ -	lv	~	\ \	^ 2	2	× 3	ω >	7
Tolerance Testing of Weights	Weight kits	weights	<pre> < weights</pre>				<pre>weights</pre>			< weights
To	3		1 b	1 b	1 b	16	16	16	1 b	<u>1</u> b
			\sim	100	500	000	000	200	000	250
						_	N	N	\sim	\sim

equivalent	
an	
0	
done	
pe	
Will	
weights	basis.
Metric	weight

All other tolerance testing and calibration will be done on an hourly basis of \$25 per hour; minimum of \$25.

	TEMP.	Liquid in Glass Thermo.	X	
	FREQ.	Tuning Forks	Ħ	
	LENGTH	Rigid Rulers	Ħ	
CALIBRATION	LEN	Steel Tapes	ĽΉ	
CAI	AE.	Metal Stds	×	
	MASS VOLUME	Small Glassware	×	
		Weight	X	
		Weight == 3 kg	[조	
	VOLUME	Large > 500 gal	ഥ	
LING		VOLUME	Inter. 25-500 gal	দ
TOLERANCE TESTING		Small = 25 gal	Ēų	
TOLERA	SS	Weight >	×	
	MASS	Weight = 1000 lb	ĹΉ	

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2444

Charles R. Stockman, Metrologist Joseph M. Danko, Metrology Technician Harry Johnson, Metrology Technician Timothy J. Summers, Metrology Technician	ion	TELEPHONE NUMBER 301/841-5790 (Office) 301/454-5117 (Lab)

	TEMP.	Liquid in Glass Thermo.	ĴΈ
	FREQ.	Tuning Forks	×
	GTH	Rigid Rulers	ĵ.
CALIBRATION	LENGTH	Stee! Tapes	Ħ
CAI	JE .	Metal Stds	H
	VOLUME	Small Glassware	ĺτι
	SS	Weight > 3 kg	×
	MASS	Weight s	×
		Large > 500 gal	Ē
LING	SS VOLUME	Inter. 25-500 gal	ĨΉ
TOLERANCE TESTING		Small = 25 gal	দ
TOLERA		Weight > 1000 lb	T
	MASS	Weight	ഥ

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FEES

Labor \$16.50 per hour

	TEMP.	Liquid in Glass Thermo.	X		
	FREQ.	Tuning Forks	×		
	GTH	Rigid	Ľω		
CALIBRATION	LENGTH	Steel	Ĺτι		
CAI	AE.	Metal	ĹĽ,		
	MASS VOLUME	Small Glassware	Ţij		
		Weight 3 kg	Fu		
		Weight 3 kg	fπ		
		Large 500 gai	×		
LING	SS VOLUME	MASS VOLUME	TING	Inter. 25-500 gal	[IL
TOLERANCE TESTING			Small = 25 gal	[±1	
TOLERA			Weight > 1000 lb	[II.	
	MA	Weight = 1000 lb	ĬΉ		

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X: Services are either not available, certification was not requested, or certification was not granted.

		Apparent Mass Calibrations
WEIGHTS		Up to and including 2 lbs
Tolerance Testing		Up to and including 1 kilogram Over 1 kilogram and including 30 kg
Up to and including 2 lbs Over 2 lbs and including 50 lbs	\$2.00 esch 2.50 each	Volumetric Measures
Up to and including J. kilogram Over I kilogram and including 30 kg	2.00 each 2.50 each	Glass Flasks and Gradustes Field Test Measures up to and includi
If a request is made that weights be adjusted to meet the indicated tolerance, an additional charge of $\S1.00$ per weight	usted to meet the e of \$1.00 per weight	5 gallons Field Test Meaaures over 5 gallona
shall be made on those weights which are readily adjustable.	readily adjustable.	Steel Tapes
		50 feet or less Over 50 feet and including 100 feet Over 100 feet

Massachusetts

\$3.00 each 3.50 each 3.00 each 3.50 esch

\$10.00 each 12.00 each 15.00 each

5.00 each \$10.00 each \$10.00 each

and including

TELEPHONE NUMBER	517/373-1060
ADORESS	Food Division Department of Agriculture Ottawa Building, 4th Floor P.O. Box 30017 Lansing, MI 48909
LABORATORY STAFF	Harold Birgy, Metrologist and Weights and Measures Specialist Frank Nagele, Metrologist and Weights and Measures Specialist

	TEMP.	Liquid in Glass Thermo.	X
	FREQ.	Tuning Forks	X
	LENGTH	Rigid Rulers	ĹΤ
CALIBRATION	LEN	Steel Tapes	F
CA	AE	Metal	F
	VOLUME	Small Glassware	Ή
	MASS	Weight 3 kg	ᅜᅺ
	M	Weight 3 kg	F
		Large > 500 gal	단
LING	VOLUME	Inter. 25-500 gal	Ħ
TOLERANCE TESTING		Small = 25 gal	দ
TOLERA	MASS	Weight > 1000 lb	ᅜ
	MA	Weight	币

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FI FI S

Labor \$29 per hour

TELEPHONE NUMBER	612/341-7206
ADDRESS	Division of Weights and Measures 2277 Highway 36 St. Paul, MN 55113
LABORATORY STAFF	Joslyn W. Donnan, Metrologist Georgia Harris, Metrologist

	TEMP.	Liquid in Glass Thermo.	X
	FREQ.	Tuning Forks	X
	GTH	Rigid Rulers	X
CALIBRATION	LENGTH	Steel	×
CAI	AE	Metal Stds	×
	VOLUME	Small Glassware	×
	MASS	Weight > 3 kg	×
	M	Weight ====================================	×
		Large > 500 gal	×
TING	VOLUME	Inter. 25-500 gal	X
TOLERANCE TESTING		Small = 25 gal	×
TOLERA	MASS	Weight > 1000 lb	×
	MA	Weight = 1000 lb	X

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FEES

Labor \$75 per hour

LABORATORY STAFF	ADDRESS	TELEPHONE NUMBER	
Ervin D. Torrence, Metrologist	Department of Agriculture and Commerce P.O. Box 1609 Jackson, MS 39205	601/359-3648 (Office) 601/877-3802 (Lab)	

	0.	in S 10.	
	TEMP.	Liquid ii Glass Thermo	×
	FREO.	Tuning Forks	×
	LENGTH	Rigid Rulers	Z
CALIBRATION	LEN	Steel Tapes	N
CAI	AE	Metal Stds	×
	VOLUME	Small Glassware	×
	MASS	Weight 3 kg	N
	M	Weight == 3 kg	N
		Large 500 gal	×
TING	VOLUME	Inter. 25-500 gal	×
TOLERANCE TESTING		Small = 25 gal	Z
TOLERA	MASS	Weight > 1000 lb	X
	MA	Weight ====================================	N

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X: Services are either not available, certification was not requested, or certification was not granted.

SHILL

Robert Wittenberger, Lab Program Supervisor and Metrologist Vicki Boeckman, Metrology Lab Assistant Jefferson City, MO 65102	LABORATORY STAFF	ADDRESS	TELEPHONE NUMBER
	Robert Wittenberger, Lab Program Supervisor and Metrologist Vicki Boeckman, Metrology Lab Assistant	Weights and Measures Division Department of Agriculture P.O. Box 630 Jefferson City, MO 65102	314/751-3440 (Office) 314/751-2922 (Lab)

			_
	TEMP.	Liquid in Glass Thermo.	×
	FREQ.	Tuning Forks	댐
	GTH	Rigid	×
CALIBRATION	LENGTH	Steel Tapes	X
CAL	Æ	Metal Stds	X
	VOLUME	Small Glassware	X
	MASS	Weight > 3 kg	X
	MA	Weight = S	×
		Large > 500 gal	Ħ
LING	VOLUME	Inter. 25-500 gal	F
TOLERANCE TESTING		Small = 25 gal	×
TOLERA	MASS	Weight 7000 lb	×
	MA	Weight	Ĩ-

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\$35 per hour, precision calibration/with a minimum of one hour charge for either method. Time periods over one hour shall be computed to the nearest hour. . \$25 per hour, tolerance testing Labor

LABORATORY STAFF	ADDRESS	TELEPHONE NUMBER
Edgar L. Kelsh, Metrologist	Division of Weights and Measures 1424 9th Avenue Helena, MT 59620	406/444-3164

	TEMP.	Liquid in Glass Thermo.	X
	FREQ.	Tuning Forks	×
	GTH	Rigid	X
CALIBRATION	LENGTH	Stee! Tapes	×
CAL	JE J	Metal Stds	×
	VOLUME	Small Glassware	×
	MASS	Weight 3 kg	X
	MA	Weight s	X
		Large 500 gal	X
LING	VOLUME	Inter. 25-500 gal	X
TOLERANCE TESTING		Small = 25 gal	X
TOLERA	SS	Weight > 1000 lb	X
	MASS	Weight = 1000 lb	X

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Labor \$10 per hour * Laboratory is not certified

I ABORATORY STAFF	ADDRESS	TELEPHONE NUMBER
Richard Suiter, Metrologist Gary Kliment, Metrologist Craig Olson, Metrologist	Division of Weights and Measures Department of Agriculture P.O. Box 94757 Lincoln, NE 68509	402/471-4292 (Office) 402/471-2176 (Lab)

TOLERANCE LESTING S VOLUME Weight Small Inter.	UME	MASS							
	larg	MAS		Control of the last of the las					
Small	l aro		SS	VOLUME	AE	LENGTH	STH	FREO.	TEMP.
Small	I ard								oi pinoi
	0 /	Weight	Weight	Small	Metal	Steel	Rigid	Tuning	Glass
00C-C7 =	1	1 -		Glassware	Stds	lapes	KEIES	LOIMS	Thermo
1000 lb 25 gal gal	1 500 gal	3 Kg	50 M						
							ŗ	Þ	>
F	[تدر	Ē	ഥ	ഥ	Ŀ	ĽΤ	4	V	<

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FFF

Labor \$23 per hour

LABORATORY STAFF	ADDRESS	TELEPHONE NUMBER
Walter F. Headrick, Metrologist	Nevada Department of Agriculture P.O. Box 11100 Reno, NV 89431	702/789-0166

	P.	d in SS mo.	
CALIBRATION	TEMP.	Liquid in Glass Thermo.	X
	FREQ.	Tuning Forks	×
	GTH	Rigid Rulers	0
	LENGTH	Steel Tapes	년
CAI	u	Metal Stds	ഥ
	VOLUME	Small Glassware	0
	MASS	Weight 3 kg	0
	MA	Weight = 3 kg	0
		Large > 500 gal	ഥ
TOLERANCE TESTING	VOLUME	Inter. 25-500 gal	দ
		Small = 25 gal	দ
	SS	Weight 7000 lb	×
	MA	Weight	Ā

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X: Services are either not available, certification was not requested, or certification was not granted.

New Hampshire

LABORATORY STAFF	ADDRESS	TELEPHONE NUMBER
Michael Grenier, Metrologist	Bureau of Weights and Measures 85 Manchester Street Concord, NH 03310	603/271-3709

SERVICES AVAILABLE

CALIBRATION	TEMP.	Liquid in Glass Thermo.	×
	FREO.	Tuning Forks	×
	ENGTH	Rigid	FI
	LEN	Stee! Tapes	ഥ
CAI	Ē.	Metal Stds	×
	VOLUME	Small Glassware	X
	MASS	Weight > 3 kg	Ţ
	MA	Weight	ഥ
	VOLUME	Large > 500 gal	×
TOLERANCE TESTING		Inter. 25-500 gal	×
		Small = 25 gal	F
		Weight 2 1000 lb	X
	MASS	Weight	F

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Test weights 500 lb and 1,000 lb - \$25
Test weights 5, 10, 25, 50 lb - \$10
Test kits - 30 lb - \$30
Glass flasks - \$10
Field test measures 1 and 5 gal - \$10
All other calibrations @ \$25 per hour

TELEPHONE NUMBER	609/292-4615 (Office) 609/984-3598 (Lab)	
ADDRESS	Office of Weights and Measures Dept. of Law and Public Safety 187 West Hanover Street Trenton, NJ 08625	
LABORATORY STAFF	William J. Bonan, Metrologist Pasquale D'Errico, Weights and Measures Inspector III	

	7		n
	TEMP.	Liquid in Glass Thermo.	X
CALIBRATION	FREQ.	Tuning Forks	N
	TH	Rigid Rulers	N
	LENGTH	Steel Tapes	N
CAI	Æ	Metal Stds	z
	VOLUME	Small Glassware	N
	MASS	Weight > 3 kg	Z
	MA	Weight s 3 kg	Z
	VOLUME	Large 500 gal	Z
TOLERANCE TESTING		Inter. 25-500 gal	Z
		Small = 25 gal	z
	MASS	Weight > 1000 lb	×
	MA	Weight = 1000 lb	N

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X: Services are either not available, certification was not requested, or certification was not granted.

SHILL

New Mexico

SERVICES AVAILABLE

TELEPHONE NUMBER

505/646-1616

Standards and Consumer Services NM Department of Agriculture

Richard F. Schulmeister, Metrologist

LABORATORY STAFF

Las Cruces, NM 88003

P.O. Box 3170

ADDRESS

		1	n
	TEMP.	Liquid in Glass Thermo.	×
CALIBRATION	FREQ.	Tuning Forks	H
	НТ	Rigid Rulers	币
	LENGTH	Stee! Tapes	H
CAI	MASS VOLUME	Metal	F
		Small Glassware	Ē
		Weight 3 kg	Ħ
	MA	Weight = 3 kg	Ŀ
	VOLUME	Large 500 gal	Ē
TOLERANCE TESTING		Inter. 25-500 gal	FI
		Small = 25 gal	ſъ
	MASS	Weight > 1000 lb	F
	MA	Weight	F

0: Service to parent organization only: F: Service available on fee basis; N: Service available, no fee.

X: Services are either not available, certification was not requested, or certification was not granted.

MILEAGE	\$0.26	\$0.26	\$0.24 \$0.26 \$0.24	\$0.26	the and the the service
EQUIPMENT CHARGES (when applicable)		\$ 5.00	\$ 5.00 \$ 7.50 \$ 6.00	\$ 7.50	the above schedule, service requested se cost of providing
PEASONNEL SERVICES (per man hour)	\$20.00	\$18.00	\$15.00 \$18.00 \$15.00	\$15.00	vices nct covered by fee depending on the swill not exceed th partment.
SERVICES PERFORMED	Metrology (1/2 hour minimum)	scale Testing Scall capacity Large capacity	Meter Testing Small capacity Large capacity LP Gas	Volumetric calibrations	Miscellancous: For services not covered by the above schedule, the department may charge a fee depending on the service requested and the circumstances. Such fees will not exceed the cost of providing the service as determined by the department.

	TEMP.	Liquid in Glass Thermo.	X
CALIBRATION	FREO.	Tuning Forks	X
	VOLUME	Rigid Rulers	Έ
		Steel Tapes	Ē
CA		Metal Stds	Ŀ
		Small Glassware	Ŀ
	MASS	Weight 3 kg	F
	M	Weight = 3 kg	F
	VOLUME	Large > 500 gal	Ē
TOLERANCE TESTING		Inter. 25-500 gal	H
		Small = 25 gal	দৈ
	MASS	Weight	Ŀ
	MA	Weight 5	Ē.

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5333

2.00 10.00 20.00 20.00	12.00 12.00 12.00
(b) Volumetric Standards (l) Tolerance testing and adjustment where applicable of open mack vessels by transfers Up to and including 4 L (i.1 gel) Over 4 L and including 20 L (5.3 gel) Over 20 L and including 100 L (5.4 gel) Over 100 L and including 100 L (2.4 gel) Over 100 L and including 100 L (2.4 gel) Over 100 L and including 100 L (2.4 gel) Over 100 L	techniques Up to and including 4 L (1.1 gal) Over 4 L and including 40 L (11 gel) (a) Linear Standards (b) to and including 2 m (6.5 ft) Over 2 m and including 16 m (20 ft) Over 16 m and including 16 m (20 ft) Calibrations For each reported interval requested, add to above fee
812.00 20.00 2.00 4.00	20.00 20.00 20.00 20.00
(a) Mass Standards testing by direct weighing or single substitution Classe C and F. Classe C and F. Test kits 1 - 18 weights, largest weight not exceeding 3 kg (11 lb) Test kits 19 - 40 weights, largest weight not exceeding 5 kg (11 lb) by to and including 3 kg (6.6 lb) Over 3 kg and including 30 kg (6.6 lb)	Cost 100 kg and including 1200 kg (56.6 lb) (2) Tolernot testing and celibration by double eubetitution and/es melging design mith traceability where required Classes A, 5, J, H, P, O, S, S-1 per weights Up to and including 3 kg (6.6 lb) Over 3 kg and including 300 kg (66 lb) Over 30 kg and including 300 kg (660 lb) Over 300 kg and including 1200 kg (2446 lb)

(d) For any apacial test requested, an hourly rate of \$3.00 shall be charged. Estimates shall be given upon request.

New York

North Carolina

TELEPHONE NUMBER	919/733-3246
ADDRESS	Standards Division Department of Agriculture 1400 Western Boulevard Raleigh, NC 27606
LABORATORY STAFF	L. F. Eason, Metrologist Osby Clark, Assistant Metrologist Wayne Dix, Assistant Metrologist A. Lynn Gordon, Assistant Metrologist

SERVICES AVAILABLE

CALIBRATION	TEMP.	Liquid in Glass Thermo.	Z
	FREQ.	Tuning Forks	×
	H-5	Rigid Rulers	Z
	LENGTH	Steel Tapes	z
	1E	Metal Stds	Z
	VOLUME	Small Glassware	Z
	MASS	Weight 3 kg	X
		Weight = 3 kg	X
		Large 500 gal	N
TOLERANCE TESTING	VOLUME	Inter. 25-500 gal	Z
		Small ≤ 25 gal	z
	SS	Weight > 1000 lb	X
	MASS	Weight	z

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SHIH

No	rth	Па	kota
IVO	1111	Ua	nula

----40.00

Liquid Tanks 6000 gal and over---

--20.00

Liquid tanks 1000 gal and under--

Liquid tanks 1000 thru 6000--

Bruce Niebergall, Metrologist	Department of Weights and Measures Public Service Commission State Capitol Bismarck, ND 58505	701/224-2413

TELEPHONE NUMBER

ADDRESS

LABORATORY STAFF

SERVICES AVAILABLE

	TEMP.	iquid in Glass Thermo.	×
	<u>H</u>		
	FREO.	Tuning Forks	×
	БТН	Rigid	X
CALIBRATION	LENGTH	Steel Tapes	×
CAL	ш	Metal Stds	×
	VOLUME	Small Glassware	X
	MASS	Weight 3 kg	×
	MA	Weight = 3 kg	FL.
		Large > 500 gal	F4
LING	VOLUME	Inter. 25-500 gal	H
TOLERANCE TESTING		Small = 25 gal	내
TOLERA	SS	Weight 1000 lb	F
	MASS	Weight	H

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FFFS

500 pound and 1000 pound	l pound thru 50 pounds1.50	Test Kits (All)10.00	Field test measures 1 thru 5 gallon capacity 3.00

^{*}Equipment not properly prepared will not be accepted for calibration unless by prior appointment only and a fee of \$30.00 per hour will be charged for cleaning and painting.

6		
h	9	0
1 1	0	V

	TEMP.	Liquid in Glass Thermo	
	_		×
	FREQ.	Tuning Forks	×
	LENGTH	Rigid	F
CALIBRATION	LEN	Steel Tapes	F
CAI	AE	Metal Stds	দ
	VOLUME	Small Glassware	×
	MASS	Weight 3 kg	Ĺ
	MA	Weight S kg	Ŀ
		Large 500 gal	×
TING	VOLUME	Inter. 25-500 gal	Ħ
TOLERANCE TESTING		Small ≤ 25 gal	দ
TOLERA	MASS	Weight > 1000 lb	ᅜ
	MA	Weight = 1000 lb	다.

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5444

Labor \$15 per hour

LABORATORY STAFF	ADDRESS	TELEPHONE NUMBER
Ken Fraley, Metrologist	Oklahoma Bureau of Standards 2800 North Lincoln Oklahoma City, OK 73105	405/521-3864 Х370

	TEMP.	Liquid in Glass Thermo.	X
	FREO.	Tuning Forks	X
	LENGTH	Rigid Rulers	ᅜ
CALIBRATION	LEN	Steel Tapes	Έ
CAI	AE.	Metal Stds	ĹŦĄ
	VOLUME	Small Glassware	ഥ
	MASS	Weight 3 kg	Ţ
	MA	Weight = 3 kg	뇬
		Large > 500 gal	X
TING	VOLUME	Inter. 25-500 gal	X
TOLERANCE TESTING		Small = 25 gal	৸
TOLERA	MASS	Weight > 1000 lb	놘
	MA	Weight = 1000 lb	F

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X: Services are either not available. certification was not requested, or certification was not granted.

	Tolsrance cast for Class 2 and 3 standards of mass.	Tolerance test for Cless 4 and 5 standards of mass.	13.00 6.00 15.00 20.00 23.00	Tolerance rest for Class b and Fatendards of mass. Tolerance Test then Necessary Report of Calibration with mass corrections No Adjustiment Adjust to Necessary In to and starfaction with assecutions 1 to are 1 to second
9.00				52.00 53.00 6.00 6.00 6.00 6.00 15.0

Up to and including 3 lb or 3 kg	26.00	
Ower 5 1b or 3 kg and including 25 1b or 10 kg	10.110	
Ower 25 1b or 10 kg and including 50 1b or 30 kg	16.00	
Ower 50 1b or 30 kg and including 500 1b or 300 kg	20.00	
Ower 500 1b or 300 kg and including 1000 1b or 500 kg	72.00	
Ower 1000 1b or 500 kg end including 2300 1b or 1250 kg	30.00	
Tulerance test for stenderde of volume.		
Up to and including I gal or & litera	5.00	
Over 1 get or 4 itters and including 5 get or 20 itters	10.00	
Over 50 gel or 200 liters and including 100 gel or 400 liters	00.09	
Over 100 gai or 400 liters and for each 3 gai of 20 liters	lerance	2
Tolerence teet for standerds of langth.		
Every foot or mater tested	- 1.00/fe ue m.	i.
Every 10 fact of 3 agent tested assessment 2.30/10 ft of	.50/10 (ĺ
Every 50 (ser or 15 meters tested	.00/50 (2
Every 100 fast or 30 maters ceated	.007 100	2
The state of the s	Samme !	

Oklahoma

TELEPHONE NUMBER	503/378-3792
ADDRESS	Weights and Measures Division Agriculture Building 635 Capitol Street, NE Salem, OR 97310
LABORATORY STAFF	James F. Clifford, Metrologist

	T	1	1
	TEMP.	Liquid in Glass Thermo.	×
CALIBRATION	FREQ.	Tuning Forks	×
	LENGTH	Rigid Rulers	Ţ
	LEN	Stee! Tapes	H
	III	Metal Stds	×
	VOLUME	Small Glassware	×
	SS	Weight 3 kg	Į±,
	MASS	Weight = 3 kg	Ţ <u>r</u>
		Large > 500 gal	দ
TOLERANCE TESTING	VOLUME	Inter. 25-500 gal	দ
		Small = 25 gal	দ
	MASS	Weight > 1000 lb	দ
	MA	Weight S 1000 lb	দা

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0. 1 1 1 1

Labor \$24 per hour

Pennsylvania

LABORATORY STAFF	ADDRESS	TELEPHONE NUMBER
G. Edward Carpenter, Metrologist James C. Adams, Metrologist	Bureau of Standards Weights and Measures 2301 North Cameron Street Harrisburg, PA 17120	717/787-9089 (Office) 717/787-6426 (Lab)

SERVICES AVAILABLE

CALIBRATION	TEMP.	Liquid in Glass Thermo	×
	FREQ.	Tuning Forks	×
	LENGTH	Rigid Rulers	Z
	LEN	Steel Tapes	N
CAI	AE	Metal Stds	X
	VOLUME	Small Glassware	X
	155	Weight 3 kg	Z
	MASS	Weight \leq 3 kg	Z
		Large 500 gal	X
TING	VOLUME	Inter. 25-500 gal	Z
TOLERANCE TESTING		Small = 25 gal	Z
	SS	Weight > 1000 lb	Z
	MASS	Weight	Z

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Puerto Rico

Bureau of Enforcement	Department of Consumer Affairs	P.O. Box 41059, Minillas Station	Santurce, Puerto Rico 00940	
Juan A. Rios Vélez, Metrologist				

TELEPHONE NUMBER

ADDRESS

LABORATORY STAFF

809/724-5153

SERVICES AVAILABLE

	1		
	TEMP.	Liquid in Glass Thermo	X
	FREQ.	Tuning Forks	×
	LENGTH	Rigid Rulers	Ŀ
CALIBRATION	LEN	Stee! Tapes	Ţ
CAI	AE	Metal Stds	H
	VOLUME	Small Glassware	ഥ
	SS	Weight 3 kg	ഥ
	MASS	Weight ====================================	Ţ
		Large > 500 gal	×
TOLERANCE TESTING	VOLUME	Inter. 25-500 gal	H
		Small = 25 gal	년
	MASS	Weight > 1000 lb	F
	MA	Weight	댐

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1. Up to and including 50 ft., \$5,00 2. Over 50 and including 100 ft. 8.00

Equipment shall be clean and pattered before administrate the same of the and pattern to the acrotic requested no certa \$10.00 per hour for will be charged. Fees will be those of the customary system with an allowed equivalent variation of 10% of the capacity. 3. Over 100 ft... \$10.00 plus \$2.00 every 25 ft. in excess of 100 ft. IV. Metric Devices 10 gel. ml.....12.50/doc. \$ 8.25/doz.

\$ 8.25

* Laboratory is not certified

LABORATORY STAFF	ADDRESS	TELEPHONE NUMBER
Lynda P. Agresti, Sealer of Weights and Measures	Weights and Measures Division Department of Labor 386 Central Avenue Pawtucket, RI 02860	401/277-2758

	TEMP.	Liquid in Glass Thermo	×
CALIBRATION	FREQ.	Tuning Forks	×
	LENGTH	Rigid Rufers	×
	LEN	Steel Tapes	×
	Æ	Metal Stds	×
	VOLUME	Small Glassware	×
	155	Weight 3 kg	×
	MASS	Weight S 3 kg	×
		Large > 500 gal	×
TOLERANCE TESTING	VOLUME	Inter. 25-500 gal	×
		Small = 25 gal	×
	MASS	Weight > 1000 lb	×
	MA	Weight = 1000 lb	X

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X: Services are either not available, certification was not requested, or certification was not granted.

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Labor \$7.50 per hour * Laboratory is not certified

South Carolina

I ABORATORY STAFF	ADDRESS	TELEPHONE NUMBER
John V. Pugh, Metrologist Billy Kennington, Metrologist	Consumer Protection Division Department of Agriculture	803/758-2130
	F.U. Box 1120U Columbia, SC 29211	

SERVICES AVAILABLE

	TEMP	ראבע.	Forks Chermo
lose (Rulers N
	JULI	LENGIN	Steel Tapes
CAI		M.F.	Metal Stds
		VOLUME	Small Glassware N
		SS	Weight 3 kg
	MASS	W	Weight = 3 kg
			Large > 500 gal
TOLERANCE TESTING	NCE TESTING VOLUME		Inter. 25-500 gal
			Small = 25 gal
		SS	Weight 1000 lb
		MASS	Weight 1000 lb

O: Service to parent organization only; F: Service available on fee basis; N: Service available, no fee.

X: Services are either not available, certification was not requested, or certification was not granted.

LABURATURY STAFF	AUDRESS	TELEPHONE NUMBER
Jim Pesky, Metrologist	Division of Commercial Inspection and Regulation Department of Commerce State Capitol Pierre, SD 57501	605/773-3693

	1		
CALIBRATION	TEMP.	Liquid in Glass Thermo.	×
	FREQ.	Tuning Forks	×
	LENGTH	Rigid Rulers	×
	LEN	Stee! Tapes	×
CAI	<u></u>	Metal Stds	×
	VOLUME	Small Glassware	×
	SS	Weight 3 kg	×
	MASS	Weight = 5	×
		Large > 500 gal	X
TOLERANCE TESTING	VOLUME	Inter. 25-500 gal	X
		Small = 25 gal	F
	SS	Weight > 1000 lb	X
	MASS	Weight	F

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X: Services are either not available, certification was not requested, or certification was not granted.

Labor \$20 per hour

Tennessee

LABORATORY STAFF	ADDRESS	TELEPHONE NUMBER
Charles Edde, Laboratory Technician	Weights and Measures Section TN Department of Agriculture Box 40627, Melrose Station Nashville, TN 37204	615/360-0159 (Office) 615/360-0158 (Lab)

SERVICES AVAILABLE

	1		
	TEMP.	Liquid in Glass Thermo.	X
	FREQ.	Tuning Forks	×
	LENGTH	Rigid Rulers	×
CALIBRATION	LEN	Steel Tapes	×
CAI	AE	Metal Stds	×
	VOLUME	Small Glassware	×
	MASS	Weight 3 kg	X
	MA	Weight == 3 kg	Z
		Large 500 gal	X
TING	VOLUME	Inter. 25-500 gal	X
TOLERANCE TESTING		Small = 25 gal	N
TOLERA	MASS	Weight	×
	MA	Weight	N

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X: Services are either not available, certification was not requested, or certification was not granted.

FFF

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- 6		А	u	U

LABORATORY STAFF	ADDRESS	TELEPHONE NUMBER
James H. Eskew, Chief Metrologist Kendall Koonce, Metrologist Jose Patroni, Metrology Patrick Forester, Metrologist Wayne Bamsch, Metrologist Jason Justice, Metrologist	TX Department of Agriculture Metrology Laboratory 119 Cumberland Road Austin, TX 78704	512/475-3720

	·		
	TEMP	Liquid in Glass Thermo	×
	FREQ.	Tuning Forks	×
	БТН	Rigid Rulers	Ŀ
CALIBRATION	LENGTH	Stee! Tapes	ĬΉ
CAL	AE	Metal Stds	Ŀ
	VOLUME	Small Glassware	ţъ
	MASS	Weight 3 kg	Н
	MA	Weight	F
		Large 500 gal	F
LING	VOLUME	Inter 25-500 gal	Ľ
TOLERANCE TESTING		Small ≤ 25 gal	H
TOLERA	MASS	Weight 7	Ĺτι
	MA	Weight = 1000 lb	F

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FEES

Larger than 5-G gallon per me	Callbrations:	
\$20.00 per weight 10.00 per weight 5.00 per weight	2.00 per weight	2.00 per measure 2.00 per measure
per per per	per	per
\$20.00 10.00 5.00	2.00	2.00 per m 2.00 per m
16 16 16	1b	
5,000 2,500 1,000	1,000 1b	
Tolerance Testing: 5,000 lb 2,500 lb 1,000 lb	Under	5-Gallon Measures 1-Gallon Measure

J¢ per	\$15.00 per weight 30.00 per weight 50.00 per weight
n is \$2.00 plus 20	0 to 30 kilograms 3 to 30 kilograms 30 kilograms and over
Larger than 5-Gallon is \$2.00 plus 20¢ per gallon per measure	Calibrations: 0 to 3 to 30 kL

LABORATORY STAFF	ADDRESS	TELEPHONE NUMBER
Daniel S. Mays, Metrologist	UT Department of Agriculture Weights and Measures Division 350 N. Redwood Road Salt Lake City, UT 84116	801/533-7550

	TEMP.	Liquid in Glass Thermo.	X
	FREO.	Tuning Forks	×
	GTH	Rigid Rulers	Ē
CALIBRATION	LENGTH	Steel Tapes	لتنا
CA	ā	Metal Stds	×
	VOLUME	Small Glassware	X
	MASS	Weight 3 kg	×
	W	Weight \leq 3 kg	×
		Large > 500 gal	ഥ
LING	VOLUME	Inter. 25-500 gal	Ē
TOLERANCE TESTING		Small = 25 gal	, Eu
TOLERA	MASS	Weight > 1000 lb	ഥ
	MA	Weight = 1000 lb	Ē

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FEES

LABORATORY STAFF	- ADDRESS	TELEPHONE NUMBER
Raymond P. Cioffi, Metrologist	Department of Agriculture 116 State Street Montpelier, VT 05602	802/828-2436

	,		
	TEMP.	Liquid in Glass Thermo	×
	FREO.	Tuning Forks	×
	LENGTH	Rigid Rulers	×
CALIBRATION	LEN	Steel Tapes	×
CA	AE.	Metal Stds	×
	VOLUME	Small Glassware	H
	MASS	Weight > 3 kg	X
	MA	Weight ====================================	×
		Large > 500 gal	X
LING	VOLUME	Inter. 25-500 gal	মি
TOLERANCE TESTING		Small = 25 gal	고
TOLERA	MASS	Weight Small	×
	MA	Weight = 1000 lb	·

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FEES

Labor \$25 per hour

LABORATORY STAFF	ADDRESS	TELEPHONE NUMBER	
Marion W. Cain, Metrologist James W. Sadler, Assistant Metrologist	Weights and Measures Section Div. of Product & Industry Regulation Dept. of Agriculture & Consumer Servs. P.O. Box 1163, Room 403 Richmond, VA 23209	804/786-0479	

			,		
	TEMP	Liquid in Glass Thermo	X		
	FREQ.	Tuning Forks	Z		
	LENGTH	Rigid Rulers	N		
CALIBRATION	LEN	Steel Tapes	Z		
CA	Æ	Metal Stds	Z		
	VOLUME	Small Glassware	Z		
	MASS	t Weight 3 kg	Z		
	e Weigh				
		Large 500 gal	Z		
DNII	VOLUME	Inter. 25-500 gal	N		
TOLERANCE TESTING		Small = 2 = 2 25 gal	Z		
TOLERA	MASS	Weight > 1000 lb	N		
	MA	Weight ≤ 1000 lb	N		

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FEES

LABORATORY STAFF	ADDRESS	TELEPHONE NUMBER
Imbert Roberts	Consumer Services Administration Golden Rock Christiansted St. Croix, Virgin Islands 00820	809/773-2226

		1	1
	TEMP.	Liquid in Glass Thermo	×
	FREQ.	Tuning Forks	×
	LENGTH	Rigid Rulers	×
CALIBRATION	LEN	Steel Tapes	×
CAI	¥	Metal Stds	×
	VOLUME	Small M. Glassware St	×
	MASS	Weight ** 3 kg	×
	MA	Weight = 5	×
		Large 500 gal	×
LING	VOLUME	Inter. Lar 25-500 > gal 500	×
TOLERANCE TESTING		Small = 25 gal	×
TOLERA	MASS	Weight Small	×
	MA	Weight	X

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X: Services are either not available, certification was not requested, or certification was not granted.

FEES

* Laboratory is not certified

Washington

LABORATORY STAFF	ADDRESS	TELEPHONE NUMBER
James H. Cammel, Metrologist	Weights and Measures Section Dairy and Food Division Department of Agriculture 406 General Administration Building Olympia, WA 98504	206/753-5042

SERVICES AVAILABLE *

		,	
	TEMP.	Liquid in Glass Thermo.	X
	FREQ.	Tuning Forks	X
	LENGTH	Rigid Rulers	×
CALIBRATION	LEN	Steel Tapes	Z
CA	JE J	Metal Stds	×
	VOLUME	Small N Glassware	X
	MASS	Weight 3 kg	N
	MA	Weight == 3 kg	Z
		Large > 500 gal	Z
LING	VOLUME	Inter. 25-500 gal	Z
TOLERANCE TESTING		Small = 25 25 25 gal	Z
TOLERA	MASS	Weight	Z
	MA	Weight = 1000 lb	Z

0: Service to parent organization only; F: Service available on fee basis; N: Service available, no fee.

X: Services are either not available, certification was not requested, or certification was not granted.

FEES

West Virginia

LABORATORY STAFF	ADDRESS	TELEPHONE NUMBER
Karl H. Angell, Metrologist Charles Honaker, Inspector	Department of Labor Division of Consumer Protection Charleston, WV 25305	304/348-7890 (Office) 304/727-5781 (Lab)

SERVICES AVAILABLE

	_	,	
	TEMP.	Liquid in Glass Thermo	X
	FREO	Tuning Forks	×
	СТН	Rigid Rulers	Z
CALIBRATION	Steel Ri Tapes Ru	Z	
CAI	m m	Metal Stds	z
	VOLUME	Small Glassware	Z
	MASS	Weight 3 kg	Z
	MA	Weight = 5	z
		Inter. Large 25-500 > gal 500 gal	z
LING	VOLUME		Z
TOLERANCE TESTING		Small = 25 gal	Z
TOLERA	SS	Weight Small	Z
	MASS	Weight	z

0: Service to parent organization only; F: Service available on fee basis; N: Service available, no fee.

X: Services are either not available, certification was not requested, or certification was not granted.

FEES

Wisconsin

LABORATORY STAFF	ADDRESS	TELEPHONE NUMBER
William E. Burkhardt, Metrologist Alan Porter, Metrologist	Wisconsin Department of Agriculture Trade and Consumer Protection Box 7883 4702 University Avenue Madison, WI 53707	608/266-2761

SERVICES AVAILABLE

	1	1	·
	TEMP.	Liquid in Glass Thermo.	×
	FREQ	Tuning Forks	×
	GTH	Rigid Rulers	ĺτι
CALIBRATION	LENGTH	Steel Tapes	Ē
CAI	IF.	Metal Stds	ĹΉ
	VOLUME	Small Glassware	ĹΤι
	MASS	Weight 3 kg	×
	MA	Weight ====================================	ŀΉ
		Large 500 gal	ĺτι
LING	VOLUME	Inter. 25-500 gal	ഥ
TOLERANCE TESTING		Small = 25 gal	ম
TOLERA	MASS	Weight 2 1000 lb	ᄕ
	MA	Weight = 1000 lb	ĹΉ

0: Service to parent organization only: F: Service available on fee basis; N: Service available, no fee.

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166	\$ 7.50 each		4.50 each	30.00 each	15.00 each	9.00 each	30.00 each
	1 '0		1 1	1	1	1 1	1
20100 10 10 10 10 10 10 10 10 10 10 10 10	Test Weights500 pound and 1,000 pound \$ 7.50 each All other test weights-such as 50 counds.	25 pounds, 5 pounds, 1 pound, and other	individual and smaller units	Test Kirs30 pounds (25 pieces)	Class Flashs	Field Inst Measures 1 and 5 gallon cap	Provers 50 and 100 gallon capacity

These fees are based on equipment being ready for test at time of subbission, and with one can provided by subbitting agency. All other work, including preparation of equipment raion is not properly prepared for test will be performed at the normal rate of \$10.00 per hour. A cinicum fee of 1/2 hour time will be

The verification of weights and measures used in enforcement work by State, county, and municipal governments shall be excmpt from the above noted charges.

TELEPHONE NUMBER	307/777-7556
ADDRESS	Wyoming Department of Agriculture 2219 Carey Avenue Cheyenne, WY 82002
LABORATORY STAFF	Victor Gerber, Metrologist

	_	r	
	TEMP.	Liquid in Glass Thermo.	×
	FREO.	Tuning Forks	×
	LENGTH	Rigid Rulers	×
CALIBRATION	LEN	Stee! Tapes	×
CA	¥	Metal Stds	×
	VOLUME	Small Glassware	×
	MASS	Weight > 3 kg	×
	MA	Weight	×
		Large 500 gal	X
TING	VOLUME	Inter. 25-500 gal	ম
TOLERANCE TESTING		Srnall ≤ 25 gal	냰
TOLER	MASS	Weight > 1000 lb	×
	MA	Weight \$\frac{1000}{5}\$	Ē£,

0: Service to parent organization only; F: Service available on fee basis; N: Service available, no fee.

X: Services are either not available, certification was not requested, or certification was not granted.

FEES

The Charges for laboratory services listed below are MINIMUM fees; any additional time needed to correct, clean, or paint equipment submitted for calibration shall be charged at the rate of \$25.00 per hour plus cost of materials used.

Linear Measure

Wyoming

Weights

Tolerance Test	,
Up to and including 5 1h	One yard or less
Ower 5 12 and (mall all a fine)	Over one yard, pe
Over 50 1b and distriction of the control of the co	Counter yard meas
Over 250 lb and dealers from 15 constant and 150 constant	Linear measuring
Over 500 h and district on the second of the	Measuring tapes,
Over 1000 lb and defined tool ib 11.00	Measuring tapes,
Test Kit Fees for Class C. F. and T Weights	Measuring tapes,
1 - 14 weights in kit.	
15 - 25 weights in kit	Liquid Measures
26 - 38 weights in kit	
39 weights in kit and over \$1.50 per weight over 38 weights	Up to and includi
	Over one gallon,
lest Alt Fees for Class A, B, J, M, P, O, S and Sl	Over 15 gallons,
1 - 14 Weights	Over 50 dallons,
15- 25 weights	Cross 100 cas 1 cas
26 - 38 weights	פאפר זפה אמדירווים
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The National Bur	eau of Standards rece	eives repeated requests	from industry and		
- 1 1 1	- (Department of	Defense Nuclear Regu	latory Commission)		
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